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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/812,068

03/19/2001

Laurence H. Cooke

262/043

9013

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7590

03/11/2003

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EXAMINER

THOMPSON, ANNETTE M

ART UNIT

PAPER NUMBER

2825

DATE MAILED: 03/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/812,068

Applicant(s)

COOKE ET AL.

Examiner

A. M. Thompson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 06 December 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>9</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Applicant's Amendment and Response to Office Action has been examined. The drawings and specification are amended. Claims 2-9, 11, 13-20, and 22 are amended. Claims 2-23 are pending.

1. Applicants' Amendment is partially persuasive. The pertinent rejections of the prior office action are incorporated herein.

Information Disclosure Statement

2. Applicants' Information Disclosure submission with references were considered and additionally cures the defects of the previous IDS submission i.e. the references not previously considered are listed on the instant PTO-1449A form and accordingly have now been considered. Examiner acknowledges the initialed copy of the Form 1449 from the parent application, provided as a courtesy, and expresses appreciation for the submission of the references which cannot currently be located.

Claim Objections

3. **Claims 7 and 18** are objected to: Pursuant to claims 7 and 18, it is unclear whether the phrase "a derivative circuit design" references the second derivative circuit design or derivative circuit designs within the original circuit design other than the second derivative circuit design. Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Rejection of Claims 2-23

6. **Claims 2-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al., U.S. Patent 6,175,948 ("Miller") ~~and~~ the Herbert Dawid et al. paper (Dawid paper") entitled ADPCM Codec: From System Level Description to versatile HDL Model. Miller discloses a methodology and apparatus for designing a waveform compiler, a Digital Signal Processor (DSP) type of model (see Miller, col. 5, ll. 50-57 and col. 6, ll. 10-13). Although one of ordinary skill in the art should recognize that a power analysis would be part of a DSP design methodology, Miller does not explicitly disclose a power analysis step. The Dawid paper discloses a common DSP system design methodology and environment (see Dawid, page 459, Figure 1, which details the DSP design methodology) and explicitly discloses the necessary power analysis considerations. It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to use or reference the DSP design methodology disclosed in the Dawid paper

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for further detailed disclosure or information regarding the DSP design methodology used in Miller. In this Office Action, the cites reference the Miller '948 patent unless the Dawid paper is specifically indicated.

7. Pursuant to claim 2 which recites [a] method for designing a derivative circuit block (col. 5, ll. 41-44 discloses reuse programming as a primary goal and a derivative circuit block, as disclosed by Applicants, is a reusable circuit block) comprising selecting an original circuit design (the waveform compiler, col. 5, ll. 50-57), wherein the original circuit design comprises one or more programmable fabrics (new library building blocks, col. 5, ll. 58-62); performing front-end acceptance testing on the circuit design (col. 5, line 58 to col. 6, line 5); ~~planning~~ planning a chip layout (col. 6, ll. 6-10); programming at least one of the one or more programmable fabrics (col. 6, ll. 10-19) and performing verification of the derivative circuit block (col. 6, ll. 45-50).

8. Pursuant to claim 3, wherein the step of planning the chip layout does not result in altering the chip layout (col. 6, ll. 6-16).

9. Pursuant to claim 4, further comprising the step of performing clocking and timing analysis prior to the step of performing verification of the derivative circuit block (see Fig. 9, step 910; also col. 13, line 67 to col. 14, line 11).

10. Pursuant to claim 5, further comprising the step of performing power analysis prior to the step of performing verification of the derivative circuit block (*Dawid's* Figure 1 illustrates a power analysis (*Dawid's* "power consumption") prior to verification.

11. Pursuant to claim 6, wherein only a set of new functionality added to the original circuit design and any functionality interfacing with the set of new functionality is tested or verified (col. 7, line 64 to col. 8, line 9 suggests this limitation)
12. Pursuant to claim 7, wherein steps a through e are repeated to design a second derivative design: col. 17, line 55 to col. 18, line 27 suggest this limitation (e.g. "modules can be added" and "user library component creation".
13. Pursuant to claim 8, wherein the step of planning the chip layout comprises analyzing timing requirements (col. 4, ll. 24-30; see also col. 17, ll. 8-12) to ensure the derivative circuit block meets all applicable timing requirements.
14. Pursuant to claim 9, further comprising the step of assembling the chip layout col. 6, ll. 51-53 suggests this step of completion (i.e. "the design is ready for the target implementation).
15. Pursuant to claim 10, wherein the original circuit design further comprises one or more non-programmable fabrics (existing library building blocks, col. 5, ll. 58-62).
16. Pursuant to claim 11, wherein the one or more programmable fabrics each has a port access and hierarchical routing (col. 10, ll. 1-8 and ll. 15-27 disclose the use of FPGAs which Applicants have disclosed (specification, page ¶ 120) as a programmable fabric with inherent programming access and hierarchical levels).
17. Pursuant to claim 12, further comprising the step of determining a power level for each programmable fabric and each non-programmable fabric through simulation (the Dawid paper, page 464, Figure 5 illustrates this limitation).

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18. Pursuant to independent claim 13 and dependent claims 14-23, these claims respectively address the method limitations already considered and rejected in independent claim 2 and dependent claims 3-12, respectively and additionally recites a computer readable medium for executing the claimed method. The use of database systems as disclosed by Miller (col. 15, ll. 47-67) and the Dawid paper for implementing a DSP design methodology necessarily includes the use of computer readable media. Therefore, claims 13-23 are likewise rejected based on the rationale outlined in claims 2-12, *supra*.

Remarks

19. Examiner maintains that the combination of Miller and the Dawid paper at least suggests Applicants' claimed limitations. Applicants' specification has defined a derivative design as an additional circuit design based upon an original design, but altered by a change in functionality to produce some new or different functionality. Based on Applicants' definition, Miller also discloses the creation of derivative designs albeit the term derivative design is not used. Miller at column 4, lines 21-50 states in pertinent part,

The communications engineer creates the application design to meet the requirements and constraints through selection and interconnection of reusable modules provided in software libraries. The Application Design includes **parameterization and customization** of the processing. The engineer is provided requirements and constraints for the architecture. The engineer may **create a new architecture design as a block diagram through selection and interconnection of hardware and interface modules from a reuse library** of hardware templates and interface methods or by selecting an existing architecture also contained in the library. (emphasis added)

Applicants' specification also defines the term programmable fabrics, wherein fabrics relate to hardware gates (in digital design) or programming code (in software). Miller in

the passage cited, supra, discloses hardware and interface modules which are at least within the scope of Applicants' defined fabrics. Admittedly, Miller, column 4, lines 21-50 was not referenced in the Office action. However, Examiner has provided this citation as further support and clarification for the rejection outlined, supra.

Conclusion

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to A.M. Thompson whose telephone number is (703) 305-7441. The Examiner can usually be reached Monday thru Friday from 8:00 a.m. to 5:00 p.m.. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Matthew S. Smith, can be reached on (703) 308-1323.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956 or the Customer Service Center whose telephone number is (703)306-3329.

22. Responses to this action should be mailed to:

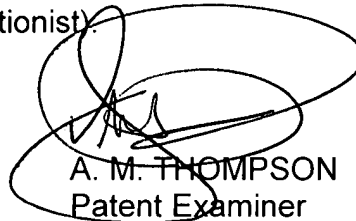
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or faxed to:

(703) 872-9318, (for **OFFICIAL** communications intended for entry)
(703)872-9319, (for Official **AFTER-FINAL** communications)

Hand-delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).



A. M. THOMPSON
Patent Examiner

8 March 2003



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